

WHAT WE CLAIM IS:

1. A holographic viewing device comprising a frame and a computer-generated hologram fitted in said frame, said computer-generated hologram constructed as a transmission Fourier transform hologram, wherein said computer-generated hologram comprises minuscule cells having pitches  $\delta_x$  and  $\delta_y$  with a reconstruction image area defined by a range of spreading of  $\pm$  first-order diffracted light of given wavelength from a diffraction grating having grating pitches  $2\delta_x$  and  $2\delta_y$  that are twice as large as said pitches of cells, and an input image pattern reconstructed at said wavelength is recorded in said computer-generated hologram in such a way that a light portion of said input image pattern overlaps a center of said reconstruction image area.
2. The holographic viewing device according to claim 1, wherein said computer-generated hologram comprises a phase hologram having a multivalued phase distribution.
3. A computer-generated hologram constructed as a transmission Fourier transform hologram for a holographic viewing device, wherein said computer-generated hologram comprises minuscule cells having pitches  $\delta_x$  and  $\delta_y$  with a reconstruction image area defined by a range of spreading of  $\pm$  first-order diffracted light of given wavelength from a diffraction grating having grating pitches  $2\delta_x$  and  $2\delta_y$  that are twice as large as said pitches of cells, and an

input image pattern reconstructed at said wavelength is recorded in said computer-generated hologram in such a way that a light portion of said input image pattern overlaps a center of said reconstruction image area.

- 5           4.     The computer-generated hologram according to claim 3, which comprises a phase hologram having a multivalued phase distribution.